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ABSTRACT

During the summer of 1986, two groups of 25 agriculture teachers from Central America participated in 1-month training programs designed to improve their knowledge and use of effective teaching methods, to develop agricultural skills appropriate to Central America, and to provide a thorough understanding of Louisiana agricultural enterprises and culture. The program was conducted at Louisiana State University in cooperation with the Panamerican Agricultural Teacher Training School of Honduras (Zamorano) and sponsored by the United States Agency for International Development. Program evaluation included a needs assessment to identify the participants' perceived needs, evaluation of the relevance of each subject matter presentation, and a final evaluation of the entire training session. Four recommendations can be based on the findings of the program evaluation: (1) needs assessment prior to planning an international training activity is essential; (2) technical agriculture topics should emphasize practical ideas based on the needs assessment, and cooperative extension agents should be used in addition to traditional professors when planning and delivering technical agriculture presentation; (3) instruction through use of qualified interpreters can be effective; and (4) written material should be translated and made available to trainees especially when presentations are made with an interpreter. (JHZ)

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EVALUATION OF A PANAMERICAN AGRICULTURAL TEACHER TRAINING PROGRAM

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EVALUATION OF A PANAMERICAN AGRICULTURAL TEACHER TRAINING PROGRAM

During the summer of 1986, two groups of twenty-five agriculture teachers from Central America participated in one-month training programs at Louisiana State University that focused upon agricultural teaching methods, agricultural skill development and observation of agricultural research. This Panamerican Agricultural Teacher Training Program was conducted in cooperation with the Panamerican Agricultural Teacher Training School of Honduras (Zamorano) and sponsored by the United States Agency for International Development. The USAID Program is one component of the agencies' Caribbean Basin Initiative providing Central American Peace Scholarships and known as the CAPS program. Five countries were represented, Costa Rica, El Salvador, Guatemala, Honduras, and Panama.

The participants were involved in two months of educational experiences prior to the teacher training program at LSU. The first month was spent in residence at the Zamorano Escuela Agricola Panamericana in Tequcigalpa, Honduras, where the students received practical training in agricultural skills. Zamorano is a "working" school, involving students in actual production agriculture as well as the classroom. Following their one month stay at Zamorano, the participants traveled to Florida for a one month program of language training and cultural orientation. The third month of their educational experience was spent receiving training in technical agricultural subjects and teaching methodology at Louisiana State University. An evaluation of the LSU program is reported in this paper.

A process evaluation was conducted during the first training program and summary evaluations were completed for both one-month sessions. One conclusion reached by the LSU project staff at the end of the summer was that we (LSU) probably learned as much about conducting training sessions for international agriculture teachers as they, the Central Americans, learned about agriculture in the United States. The findings from the evaluation of the Panamerican Agricultural Teacher Training Program were considered enlightening by the project staff and should be helpful to other agricultural educators involved in similar training activities.

Program Overview

The goal of the Panamerican Agricultural Teacher Training Program was to improve the trainees' knowledge and use of effective teaching methods, to develop agricultural skills appropriate to Central America,

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Note: The evaluation data was collected by Dr. Satish Verma, Program Development Specialist, Louisiana Cooperative Extension Service, as a component of his program planning and evaluation sessions.

and to provide a thorough understanding of Louisiana agricultural enterprises and culture. To achieve this goal, program objectives included enabling the trainees to:

1. Use varied teaching techniques enhancing teaching effectiveness in classroom and field situations.

2. Develop audio-visual materials to enhance teaching effectiveness.

3. Improve agricultural skills and knowledge.

4. Plan, implement, and evaluate appropriate agricultural education and training programs.

5. Develop agricultural curricula to meet the needs of the trainees in their respective countries.

6. Become familiar with the Future Farmers of America and 4-H and their role in vocational agriculture programs in the U.S.

7. Understand the role vocational agriculture plays in farm family life in Louisiana.

8. Understand the diversified agricultural enterprises in Louisiana and how agricultural education and training effects the continued development of these enterprises.

9. Understand the cultural diversity of Louisiana and the U.S.

The program objectives were formulated by Dr. David Riley, faculty member in the Department of Agricultural, Extension, and International Education, prior to his assignment in Jamaica and formed the basis of the technical proposal for the teacher training program. Both the objectives and structure of the program were prepared with minimal guidelines from USAID or Zamorano. Thus, an in-depth evaluation of both the process and content of the training sessions was considered essential to the overall success of the project.

Program Structure

The learning experiences consisted of a combination of classroom lectures and discussion, field trips, and to a limited degree, hands-on activities in group practice. The majority of the instruction was done in English with simultaneous translation to Spanish. The English capability of the participants was extremely limited thereby requiring that all instruction be provided in their native language. Likewise, the Spanish speaking capability of most of the faculty involved in the sessions (myself in particular) was equally limited requiring the assistance of an interpreter.

Lecture materials (handouts, transparencies) presented by participating faculty were translated into Spanish and made available to the students at the beginning of the training program. A notebook of handouts summarizing the key points of the presentations was provided to each trainee.

The program schedule was rigorous yet an adequate amount of free time was made available in the evenings for leisure activities and recreation. Structured classes or field trips were planned from 8:00am to 5:00pm every day with some sessions extending into evening hours from 7:00 - 9:00pm. All day field trips included visits to a rice research station, grain elevator and export facility and parish Farm Bureau. Approximately one-half of the on-campus presentations were on teaching methodology, program planning and evaluation, with the remaining time spent in sessions on technical agriculture topics.

Evaluation Methodology

During the first one-month session the participants completed a needs assessment as the first activity of the training program. The purpose of the needs assessment was to evaluate the appropriateness of the proposed objectives and planned activities relative to the perceived needs of the students.

Additionally the first group of participants completed an evaluation instrument after each subject matter presentation. The participants provided feedback on the following.

1. How well was the presentation understood?

2. What new or useful ideas/practices were learned and applicable in their country?

3. What topics should be given (a) more emphasis, (b) less emphasis?

4. Comments and suggestions for improving the presentations.

The evaluation summaries were translated from Spanish to English and provided to the program presenters as a means of evaluating the effectiveness of the training sessions. The results of these two evaluation practices, needs assessment and classroom presentations, were used to adjust the program for the second group. "It was not considered necessary to do either one of these for the latter group because of participant homogeneity in terms of their academic training and work experiences in their respective countries." (Verma, 1986, p.2)

An evaluation of the entire training program was conducted at the end of the final week in both sessions. This evaluation was structured so that the participants from each country met and collectively prepared a written summary of their perceptions of the training experience. This summary was shared orally with project staff and suggestions for improvement were noted.

Finally, after both training sessions were completed, selected faculty who were most heavily involved in the presentations and the project administrative staff met to review the overall program. Recommendations were discussed for improving future programs of a similar nature.

The results of the evaluation activities are presented for the needs assessment, classroom presentations, end of program assessment by country and overall staff program review. Conclusions and recommendations for other institutions planning or carrying out similar training activities are provided based upon the LSU experience.

Needs Assessment

Because of various constraints, the training program was formulated with extremely limited information about the educational background, work experience or training needs of the participants. Essentially, the program was planned based upon general knowledge of the educational and agricultural situation in Central America. The analysis of the needs assessment indicated the planned program as outlined would meet participant expectations. Verma (1986), who organized the needs assessment, proposes the following caution.

> However, as a cautionary note, it should be emphasized that when beginning needs assessments such as this are used in situations where respondents are presented only with titles of topics, in a sharply different cultural environment, they may hesitate to say what or how they feel and/or they may have difficulty in understanding what is likely to be covered in the topics. As a result, their responses could be inappropriate or invalid, and be of limited help to the evaluator making judgments in adjusting the program. (p.3)

Classroom Presentations

All classroom presentations made to the first group of trainees were evaluated. In general, the participants indicated that they understood the presentations very well or fairly well. Overall, for the sessions dealing with teaching methodology, 85% of the students understood the presentations very well. The remaining 15% understood the presentations fairly well. It is significant to note that all presentations on the subject of teaching methods and techniques, approximately ten hours, were done with the assistance of an interpreter. It appears that the participants were not greatly handicapped because the instructor was not proficient in Spanish.

A summary of the students reactions to the sessions covering education (teaching methods, extension education, etc.) is presented in Table 1. The data presented are the responses to the question, what new or useful ideas/practices were learned and applicable in your country? Eleven topics received six or more mentions with the development and evaluation of an extension plan being cited most often as a useful practice learned.

Table 1

Useful Ideas/Practices Learned From Presentations on Education Topics

Ideas/Practices	Number of Times Mentioned
How to prepare an Extension Plan of Work	26
How to develop an Extension Evaluation Plan	21
Motivational techniques	19
Practice Teaching	14
Audio visual aids	11
Extension program and teaching objectives	11
Extension teaching methods and techniques	10
Establishing teaching objectives	10
Lesson and class planning	8
Finding student's needs	8
Parental involvement	6

A percentage of applicable practices relative to learned practices was calculated in order to determine relevance of the sessions to meeting the needs of the participants. Data in Table 2 show the number of ideas or practices mentioned as learned by the trainees for each of the eight sessions on educational topics and the number of ideas mentioned as applicable to situations in their home country. Twenty-eight ideas were learned through the practice of microteaching with all ideas considered applicable to teaching students in their home country.

Table 2

Number of Ideas/Practices Cited as Learned and Number Applicable for Sessions on Education Topics

Sessions	Number of ideas/practices mentioned		
	Learned	Applicable	% of Learned
Micro Teaching	28	28	100
Extension Program Planning	65	53	82
Extension Program Implementation	41	33	81
Extension Program Evaluation	58	45	78
Teaching Methods (Student Motivation)	61	46	75
Curriculum Development	52	31	60
Teaching Methods (Lesson Planning)	70	42	60
Vocational Agriculture in LA	68	39	57
	443	317	72

Similar evaluation data was collected for the sessions dealing with technical agriculture topics. Table 3 shows the number of ideas/practices mentioned as learned from the technical agriculture presentations. "Diagnosing and controlling animal parasites" was cited most frequently as a new practice learned. Eleven practices are presented in Table 3 which were mentioned three or more times by the participants.

Table 3

Ideas/Practices Learned From Sessions on Technical Agriculture Topics

Ideas/Practices	Number of Times Mentioned
Diagnosing and controlling animal parasites	17
Food production and marketing systems	12
Potential of vegetable production in developing countries	12
Integrated pest and disease control	10
Poultry feeding and feeds	9
Types of food packaging	8
Types of food processing	7
Farm management techniques	6
Diseases, vaccines, and prevention in poultry	6
Marketing techniques for developing countries	4
Post-harvest techniques	3

Data in Table 4 summarize the number of ideas/practices mentioned as learned during each of the seven sessions on technical agriculture topics and the number of ideas that were applicable to situations in the trainees' home countries. The session with the highest percentage of practices judged to be applicable was Veterinary Science.

Table 4

Number of Ideas/Practices Cited as Learned and Number Applicable for Sessions on Technical Agriculture Topics

Sessions	Number of ideas/practices mentioned		
	Learned	Applicable	% of Learned
Veterinary Science	35	32	91
Poultry Science	31	24	77
Agricultural Economics	31	19	61
Horticulture	21	12	57
Food Science	17	9	53
Plant science	44	20	45
Agricultural Engineering	18	8	44
	197	124	63

End of Program Assessment by Country Groups

Both groups of trainees were asked to evaluate the overall effectiveness of the training activities at the end of the four-week teacher training program. Five groups, one group for each country represented, presented their assessments orally in a two-hour session and furnished written comments of their evaluation. The most important points made by the participants collectively are summarized. Significant points were:

1. The content of the technical agriculture presentations was not as useful as desired. In some cases, the presentations were too elementary and of limited value. In other cases, presentations were made on topics utilizing high technology equipment largely unavailable in Central America. It was recognized that due to the inability to conduct a thorough needs assessment, the program administration was handicapped in their ability to plan the technical agriculture topics.

2. Some of the technical agriculture presentations were too theoretical when practical examples were desired by the trainees. As the students put it, "unite theory with practice."

3. Many good things were learned in the sessions concerning education topics. The most useful activity was microteaching where the participants were videotaped presenting a ten minute lesson and then allowed to view themselves as the teacher.

4. The trainees cited several factors that impede their ability to implement some of the ideas learned from the teacher training program. These factors included:

    a. mandated rigid curriculum.
    b. lack of economic resources.
    c. larger class sizes.

Evaluation by Program Faculty

At the conclusion of both training programs the project staff and selected faculty met to discuss the effectiveness of the program. The following conclusions were reached with respect to three areas, subject matter, program objectives, and administrative process.

Subject Matter

The trainees were highly positive in their evaluation of the effectiveness of the teaching evaluation of the technical agriculture topics. It was evident that a needs assessment should have been made prior to the trainees arrival at LSU so that the agricultural science presentations would have been more useful.

Objectives

Results of the evaluation indicated that not all of the objectives of the program were successfully attained. It was determined that the program objectives were too ambitious for a one-month training program and that the trainees should be exposed to less general topics determined through the needs assessment.

Administrative Process

The trainees were complimentary in their evaluation of the translators used in many of the presentations. However, it became evident that the project was understaffed to properly handle the written translation and to check the translated material for syntax and grammatical errors.

Conclusions and Recommendations

Based upon the findings of the evaluation efforts for the Panamerican Agricultural Teacher Training Program the following conclusions and recommendations are offered to persons or institutions planning similar training programs.

1. There is no substitute for a thorough needs assessment prior to the planning of an international training activity, particularly when a majority of the persons involved have limited first-hand knowledge of the situation and conditions surrounding the participants in their home countries.

2. The planning of specific sessions on technical agriculture topics should emphasize practical ideas or practices based on the needs assessment. It is recommended that Cooperative Extension Agents be used in addition to professional faculty when planning and delivering technical agriculture presentations.

3. The delivery of instruction through the use of interpreters can be effective when approached with a positive attitude and quality interpreters.

4. To the extent possible, written material should be translated and made available to trainees especially when presentations are made with the use of an interpreter.

Educational Importance

In general, the Panamerican Agricultural Teacher Training Program was judged to be a successful venture for both LSU and the program participants. The description of the program and the corresponding evaluation by the trainees could be used by agricultural educators in other institutions as they plan similar activities. Much is learned through sharing the successes as well as the mistakes made in implementing the Panamerican Agricultural Teacher Training Program.